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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,598

09/21/2006

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23995

7590

04/11/2008

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EXAMINER

CHEN, WENPENG

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

04/11/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/593,598	<b>Applicant(s)</b> HASHIMOTO ET AL.	
	<b>Examiner</b> Wenpeng Chen	<b>Art Unit</b> 2624	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 20-25 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-13, 20-22, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 5 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/21/06, 1/30/07, 12/14/07, 12/17/07.</u>                     | 6) <input type="checkbox"/> Other: ____.                          |



***Specification***

1. The abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 150 words. The abstract should not exceed 25 lines of text.

The abstract exceeds 150 words.

***Claim Rejections - 35 USC § 102***

2. Claims 1-4, 6-13, 20-22, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ikeda et al (US 20020131629 listed in IDS).

a. Ikeda teaches a print medium quality adjustment system comprising an inspection watermark medium output device that outputs an inspection watermark medium to be used to inspect a print medium and a watermark quality inspection device that inspects the quality of a watermark in the print medium, wherein:

-- for Claim 1, (a) the inspection watermark medium output device (paragraph [0029]; image forming apparatus 100 of Fig. 1) includes

(1) an inspection watermark signal generation unit that generates a single inspection watermark signal or a plurality of inspection watermark signals to be used for inspection, (paragraphs [0040], [0053]-[0056])

- generates a watermark signal image by disposing the inspection watermark signal(s) in an arbitrary arrangement, (paragraphs [0053]-[0056])

- generates inspection training data having N-dimensionally encoded data indicating a numerical value, which are obtained by digitizing the inspection watermark signal(s), N being a positive integer equal to or greater than 2; (paragraphs [0053]-[0056]; Fig. 8 shows dot patterns which are 2D data, at least representing ID numbers.)

(2) an inspection medium output unit that outputs an inspection watermark medium to be used for inspection created by printing the inspection watermark signal(s) onto a medium; (paragraphs [0029], [0060]; output device 103 of Fig. 1) and

-- for Claim 1, (b) the watermark quality inspection device includes:

(1) an input unit that takes in the inspection watermark medium as a multi-value gradation input image; (paragraphs [0029], [0061]; reader 104 of Fig. 1)

(2) a signal detection unit that detects a signal embedded in the input image and extracts embedded watermark information from the signal; (paragraph [0063])

(3) a print quality judgment unit that judges watermark quality by comparing the watermark information with the inspection training data input thereto; (paragraphs [0064]-[0065])

(4) a print adjustment value output unit that outputs, based upon the results of the quality judgment, a print adjustment value to be used to improve the print quality. (paragraphs [0065]-[0068])

-- for Claim 2, an adjusted watermark medium output device that outputs an adjusted print medium based upon the print adjustment value input thereto, wherein: the adjusted watermark medium output device includes;

- a document image generation unit that creates a document image printed on a medium based upon document data; (paragraphs [0032]-[0039])

- a watermark information generation unit that N-dimensionally (N is a value equal to or greater than 2) encodes data indicating a numerical value, which are obtained by digitizing embed information to the embedded in a medium as a watermark signal; (paragraphs [0053]-[0056]; Fig. 8 shows 2D data, at least representing ID numbers.)

- a print adjustment value input unit to which the print adjustment value is input; (paragraphs [0065]-[0068])

- an adjusted watermark image generation unit that generates a watermark image based upon the document image and the watermark information by using the print adjustment value; (paragraphs [0065]-[0068])

- a medium output unit that outputs an adjusted watermark medium created by printing the watermark image onto a medium; (paragraphs [0065]-[0068], [0029], [0060]; output device 103 of Fig. 1)

-- for Claim 3, the print adjustment value output unit determines an adjustment value, which is dependent on the position assumed at the print medium, in correspondence to the difference between the inspection training data and the watermark signal detected by the signal detection unit and then output the adjustment value thus determined as the print adjustment value; (paragraphs [0053]- [0056]. [0065]-[0068]; The AddOn dots are added on positions having a well-defined positional relation. Therefore, an adjustment value is associated with the positions. The distance between the first-appearing AddOn dot and the next-appearing AddOn

dot can be associated with numerical data or character data to express numerical information or character information.)

-- for Claim 4, the inspection training data are obtained by using at least part of the watermark information; (paragraphs [0053]- [0056]. [0065]-[0068])

-- for Claim 6,

- the inspection watermark medium output device generates a plurality of inspection watermark signals; (paragraphs [0040], [0053]-[0056])

- the print adjustment value output unit determines the print medium position-dependent adjustment value by executing tabulation processing on the plurality of inspection watermark signals; (Fig. 7; paragraph [0063]; The watermarks correspond to ID stored in a table. The ID derived from the plurality of inspection watermark signals is compared with ID stored in a table.)

-- for Claim 7, the adjusted watermark medium output device is connected with the inspection watermark medium output device and the watermark quality inspection device so as to receive at least the watermark image via the network; (Fig. 1 and 5; paragraphs [0067]-[0068]; The watermark is received through the network NW110 of Fig. 1.)

-- for Claim 8, the adjusted watermark medium output device also receives the print adjustment value via the network; (Fig. 1 and 5; paragraphs [0067]-[0068]; The value is received through the network NW110 of Fig. 1.)

-- for Claim 9, wherein: the inspection watermark signal generation unit embeds characteristics information indicating document image characteristics needed for tampering detection processing as the inspection watermarking; (paragraphs [0002]-[0003], [0030], [0063]-[0064]; Forgery is a kind of tampering process. Identification number of image forming

apparatus is a kind of document image characteristics, indicating how the image is formed. The watermarks are for anti-forgery which inherently requires tampering detection.)

-- for Claim 10, wherein: the print adjustment value output unit outputs as the print adjustment value a watermark printing parameter that satisfies a predetermined allowable recognition error rate by adopting a character recognition technology; (A character recognition technology uses image recognition, extraction, and identification. In paragraphs [0063]-[0065], Ikeda uses the above technology to select an adjusted level to satisfy a 100% identifiable rate of the extracted dots. Therefore, Ikeda also teaches this feature.)

-- for Claim 11, wherein: the inspection watermark signal includes a plurality of signals different from one another provided to express identical information; (paragraph 0054; Fig. 8; As shown the AddOn dot patterns of same identical information are printed five times with different signals.)

-- for Claim 12, wherein: a printing parameter of the inspection watermark signal is determined based upon a change in the print density value for the watermark signal image; (Fig. 3; As shown a change in the print density value for the watermark signal image is performed at step 220. After that, printing parameters determined at steps 211 and 212 are determined.)

-- for Claim 13, wherein: a printing parameter of the inspection watermark signal is determined based upon a change in the arrangement of pixels constituting the watermark signal image. (Fig. 3; As shown a change in the print density value for the watermark signal image is performed at step 220. After that, printing parameters determined at steps 211 and 212 are determined. Figs. 4, 8-10 show that when the watermarking dots are changed, the printing



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parameters for each pixel associated or not associated with watermark dots varies with their positions.)

b. Ikeda further teaches a watermark quality inspection device that inspects a watermark quality of a watermark in a print medium by using an inspection watermark medium and inspection training data input thereto, comprising:

-- for Claim 20, an input unit that takes in the inspection watermark medium as a multi-value gradation input image; (paragraphs [0029], [0061]; reader 104 of Fig. 1)

-- for Claim 20, a signal detection unit that detects a signal embedded in the input image and extracts embedded watermark information from the signal; (paragraph [0063])

-- for Claim 20, a print quality judgment unit that judges the watermark quality by comparing the watermark information with the inspection training data input thereto; (paragraphs [0064]-[0065])

-- for Claim 20, a print adjustment value output unit that outputs, based upon the results of the quality judgment, a print adjustment value to be used to improve the print quality, (paragraphs [0065]-[0068]) wherein

- the inspection training data is obtained by N-dimensionally encoding data indicating a numerical value, which are obtained by digitizing a single inspection watermark signal or a plurality of inspection watermark signals, N being a positive integer equal to or greater than 2, (paragraphs [0053]-[0056]; Fig. 8 shows dot patterns which are 2D data, at least representing ID numbers.)

- the inspection watermark medium is a medium with the inspection watermark signal(s) printed thereon; (paragraphs [0029], [0060])

-- for Claim 21, the print adjustment value output unit determines an adjustment value, which is dependent on the position assumed at the print medium, in correspondence to the difference between the inspection training data and the watermark signal detected by the signal detection unit and then output the adjustment value thus determined as the print adjustment value; (paragraphs [0053]- [0056]. [0065]-[0068]; The AddOn dots are added on positions having a well-defined positional relation. Therefore, an adjustment value is associated with the positions. The distance between the first-appearing AddOn dot and the next-appearing AddOn dot can be associated with numerical data or character data to express numerical information or character information.)

-- for Claim 22, the inspection training data are obtained by using at least part of the watermark information; (paragraphs [0053]- [0056]. [0065]-[0068])

-- for Claim 24,

- the inspection watermark medium output device generates a plurality of inspection watermark signals; (paragraphs [0040], [0053]-[0056])

- the print adjustment value output unit determines the print medium position-dependent adjustment value by executing tabulation processing on the plurality of inspection watermark signals; (Fig. 7; paragraph [0063]; The watermarks correspond to ID stored in a table. The ID derived from the plurality of inspection watermark signals is compared with ID stored in a table.)

-- for Claim 25, wherein: the print adjustment value output unit outputs as the print adjustment value a watermark printing parameter that satisfies a predetermined allowable

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recognition error rate by adopting a character recognition technology. (A character recognition technology uses image recognition, extraction, and identification. In paragraphs [0063]-[0065], Ikeda uses the above technology to select an adjusted level to satisfy a 100% identifiable rate of the extracted dots. Therefore, Ikeda also teaches this feature.)

### *Allowable Subject Matter*

3. Claims 5 and 23 are objected and would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the system of Claim 5 and the device of Claim 23, which specifically comprise the following limitations in combination with other recited limitations:

-- wherein: the print quality judgment unit *divides adjustment values*, each determined in correspondence to a specific position at the print medium, *into groups* each representing one of an arbitrary number of areas, **sets an area with an adjustment value equal to or greater than a predetermined threshold value as a high-error area and designates the high-error area as a dummy watermark area with no information contained therein.**

Although Masahiko (JP 2003-209676 listed in IDS) divides pixels into areas for selecting locations for embedding information, the division is based on whether the area overlaps with a text area, not based on the adjustment value required by the claims.

### *Conclusion*

4. The prior art made of record in form PTO-892 and not relied upon is considered pertinent to applicant's disclosure.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wenpeng Chen whose telephone number is 571-272-7431. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications. TC 2600's customer service number is 571-272-2600.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

/Wenpeng Chen/  
Primary Examiner, Art Unit 2624

April 10, 2008